MSC Guidelines for Review of OSV General Arrangements

Procedure Number: T1-5 Revision Date: 12/23/99

References

a. 46 CFR, Subchapter I

b. 46 CFR, Subchapter L

c. International Convention for the Safety of Life at Sea, 1974, and its Protocol of 1978 (SOLAS), as amended

Disclaimer

These guidelines were developed by the Marine Safety Center staff as an aid in the preparation and review of vessel plans and submissions. They were developed to supplement existing guidance. They are not intended to substitute or replace laws, regulations, or other official Coast Guard policy guidance. The responsibility to demonstrate compliance with all applicable laws and regulations still rests with the plan submitter. The Coast Guard and the U. S. Department of Transportation expressly disclaim liability resulting from the use of this document.

Contact Information

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General Review Guidance

- If the vessel is new and not a sister vessel, has the Application for Inspection been submitted? In general, no plan review will occur until receipt of a copy of the Application.
- Is it clearly stated what is desired from the MSC? Are all plans requiring Coast Guard review and/or approval submitted in triplicate? Are there any special or unusual requests involved?
- Note that for vessels reviewed by ABS under NVIC 10-82, MSC review of General Arrangements plans is still required.
- Verify applicability of Regulations. See 46 CFR 90.05 (Subchapter I), 46 CFR 125.100 (Subchapter L), and SOLAS I/2, I/3, and II-1/1.
- Are all spaces identified and designated on the plan?

- For OSVs certificated under 46 CFR, **Subchapter I**, verify compliance with the following:
  - Means of Escape (46 CFR 92.10)
    - Two widely separated means of escape in all general areas accessible to passengers
    - No dead-end corridors > 40'
    - Public spaces > 300 ft^2, must have 2 means of escape
    - Direct access/route to lifeboats
    - Ladder to scuttle unacceptable as one of the two required means of escape, unless stairway is impractical
    - Stairway width greater than 28 inches, inclination less than 50 degrees.
  - Accommodations for Officers and Crew (46 CFR92.20)
    - Locations of crew quarters not forward of 5% length, no easy access to chain lockers and machinery spaces, no crew spaces below deepest load WL
    - Sleeping accommodations: no more than 4 crew/room
    - Max. 8 people/WC & toilet; location restrictions
    - Messrooms as near galley as possible
    - Hospital space requirement, if greater than 12 crew and 3 day deployments.
  - Collision Bulkhead: must meet 46 CFR 171.085(c)(1),(d),(e)(2), and (f)
    - > 5% LPP aft of FP
    - < 5% LPP + 10'aft of FP
    - Collision bulkhead must extend to the deck above the bulkhead deck, if superstructure extends from fwd of collision bulkhead to >15% LPP aft of collision bulkhead (check specific requirements of 171.085(e)(2))
  - Rails and Guards (46 CFR 92.25)
    - 46 CFR 92.25-90 applies for vessels contracted for prior to 1969
    - Rails required for decks and bridges, height > 39.5"
    - 3 rail courses with < 9" opening below lower course, for exposed peripheries of freeboard and superstructure decks

- For OSVs certificated under 46 CFR, **Subchapter L**, verify compliance with the following:
  - Means of Escape (46 CFR 127.240)
    - 2 means required for each space accessible to offshore workers or where crew normally employed (if area > 300 ft^2, or max. dimension > 20 ft); does not include windows or portholes
    - 1 of 2 means must be independent of WT doors and lead directly to open deck
    - Widely separated
    - Vertical ladder to a deck scuttle may be a means of escape if the primary escape is a stairway/passageway, installation of another stairway/passageway is not practicable, and scuttle can't be covered with deck cargo
    - Dead-end passageways must be < 40'
    - Vertical ladder rung spacing requirements, inclination angles between 70 and 90 degrees
    - Interior passageway/stairway width greater than 28 inches, inclination angle less than 50 degrees
    - Exterior ladder inclination angles less than 70 degrees
  - Location of accommodations and pilothouse (46 CFR 127.270)
    - Quarters and pilothouse must be aft of collision bulkhead.
    - Except as specified, no part of deck with accommodations may be below the design waterline
    - No hawse pipe or chain pipe through accommodations
    - No direct access between accommodations and chain lockers, cargo spaces, or machinery spaces.
    - No openings from fuel or cargo oil tanks may open into quarters
    - Quarters for crew and offshore workers must be separate, unless authorized by the OCMI
  - Construction and Arrangement of Quarters for Crew Members and Accommodations for Offshore Workers (46 CFR 127.280)
    - Crew quarters(applies for >100 GT)
      - Max 4 berths/room
      - Max 8 crew per toilet, WC, and shower
      - 6.25 feet headroom
      - 30 ft^2 and 210 ft^3 per member accommodated

- Accommodations for offshore workers (applies for > 100 GT)
  - Adequate fixed seating meeting dimensional requirements
- If vessel will carry offshore workers overnight, then quarters must:
  - Max. 6 berths/room
  - Max. 8 crew per toilet, WC, and shower
  - 20 ft^2 and 140 ft^3 per member accommodated
- Maximum number of offshore workers permitted (46 CFR 126.170):
  - As designated on the vessel's COI but not to exceed 36.
  - 12 or fewer offshore workers allowed for international voyages, unless the vessel holds a valid passenger-ship-safety certificate in compliance with SOLAS.

- Collision Bulkhead (46 CFR 174.190): same as listed above for 46 CFR, Subchapter I
- Machinery space bulkheads required to be watertight (46 CFR 174.210)
- Damaged Stability (46 CFR 174.200)
  - Check for 30" side protection around the engineroom. Boundary longitudinal bulkheads must be located at least 30" from the vertical plane taken at the side shell at the load line, or else the engineroom must be considered flooded in damaged stability calculations. If this is the case, make a comment on the return correspondence to notify the submitter of the possible impact on damaged stability.
  - Check the location of the engine exhausts and other piping within 30 inches from the outer shell at the loadline (see E1 Branch for plans if necessary information is not included in the vessel file). Engine exhaust piping is normally not considered watertight and must be routed outside of the applied damaged extents, or else the engineroom and other applicable spaces must be considered flooded in damaged stability calculations per 46 CFR 174.205(e)(4). If this is the case, make a comment on the return correspondence to notify the submitter of the possible impact on damaged stability.

- Cargo Restrictions (46 CFR 125.110)
  - May carry < 20% deadweight of Grade D and E combustible/flammable cargoes in integral tanks (no limits on excess fuel oil grades D/E, see MSC letter Serial C1-9702604, dated 10/23/97)
- Rails and Guards (46 CFR 127.310-30); same as Subchapter I requirements listed above

- For OSVs certificated under **SOLAS**, verify compliance with the following:
  - Peak and Machinery space bulkheads in cargo ships (SOLAS II-1/11)
  - Location of collision bulkhead: use same limits as that required by 46 CFR 170.190.
    - Requirement for extension of collision bulkhead above freeboard deck, if forward superstructure is located above collision bulkhead.
    - Machinery space bulkhead to the freeboard deck.
  - Double bottoms for cargo ships (SOLAS II-1/12-1)
    - Applicable for vessels constructed after February 1, 1992.
    - Required throughout length of the vessel, from collision bulkhead to afterpeak bulkhead.
    - Wells allowed in some areas with special restrictions.
    - Double bottom not required in way of watertight compartments used to carry liquids.
  - Means of escape (SOLAS II-2/45)
    - Stairways and ladders from all accommodation and normally employed spaces, with ready means of escape to the open deck
    - From each level of accommodation, 2 widely separated means of escape
    - Below lowest open deck, stairway is the primary and trunk or stairway is the secondary means of escape
    - No dead-end corridors longer than 23 feet
    - Two means of escape from Category A machinery spaces (see definition in SOLAS II-1/3.17, bow thruster rooms may qualify as Category A space); one of the following two provisions required

- Two sets of steel ladders widely separated, leading to separate egress doors in the upper part of the space; one ladder must have a continuous fire shelter, with a self-closing, gas-tight steel door at the lower end
- One steel ladder leading to the upper part of the space, and a door from the lower part of the space, well separated, that leads to a safe escape route to the open deck
- Doors bounding Category A machinery spaces must be gas-tight and self-closing (SOLAS II-2/47). If the information is not indicated on the general arrangements plan, make a comment in the return correspondence addressing this requirement.
- Two means of access/egress to radiotelegraph station

- Fire Integrity of Bulkheads and Decks (SOLAS II-2/44)
  - Accommodation spaces generally should not be adjacent to high risk spaces such as the galley, unless applicable class A fire integrity/separation and ventilation requirements are met. If the general arrangements plan indicates accommodation spaces adjacent to the galley, then include a comment in the return correspondence noting this requirement.